

Serial No. 10/630875  
Docket No. 29595-82608

**\* \* REASONS FOR AMENDMENTS AND REMARKS \* \***

Applicants wish to acknowledge with appreciation the Examiner's analysis and efforts in examining this application.

On page 2 of the Office Action, the Examiner objected to Claim 22 because the word "cellulose" was misspelled. The Examiner is thanked for noting this. Appropriate correction has been made. Withdrawal of this objection is, therefore, respectfully requested.

On page 3 of the Office Action, the Examiner rejected Claim 20 under 35 U.S.C. § 112, second paragraph, because she determined that the limitation "the sisal" in line 3 of that Claim did not have an antecedent basis. Again, the Examiner is thanked for this indication and the appropriate amendment has been made. Withdrawal of this rejection is also respectfully requested.

On pages 3 and 4 of the Office Action, the Examiner rejected Claims 19, 21-22, 26 and 43 under 35 U.S.C. § 102(e) as being anticipated by Jarrard et al. (U.S. Patent No. 6,871,898). The Examiner identifies Jarrard et al. as being directed to a soft cover for vehicles and process for making the same.

Regarding Claim 19, the Examiner alleges that Jarrard et al. teaches a composite comprising a water resistant top layer, a flexible foam layer and a protective bottom layer (Abstract). See Figure 1. The Examiner also alleges that Jarrard et al. teaches that the water resistant top layer can comprise film wherein the film is water-resistant (column 3, lines 5-55). The Examiner equates the water resistant top layer to Applicant's "permeability-resistance film layer". The Examiner contends that Jarrard et al. teaches that the flexible foam layer can comprise a thin layer of foam, preferably from 0.2-3 mm (column 4, lines 15-25), of a polymeric material (columns 4-5). The foam may allegedly be reinforced by fibers such as cotton, silk, wool or the like (column 5, lines 25-30). The Examiner takes the position that the fibers may be incorporated into the foam (column 5, lines 30-40) and, therefore, concludes that the natural

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fibers are dispersed throughout the thickness of the foam layer. The Examiner equates the flexible foam layer to Applicant's "headliner core layer", the foam to Applicant's "binding resin" and the incorporated fibers to Applicant's "randomly-oriented natural fibers". Allegedly Jarrard et al. teaches a bottom protective layer comprising a woven fabric having a stain resistant treatment such as PREFIXX or SCOTCHGUARD, a TEFLON coating or other treatments that provides satisfactory protection from incidental moisture or other assaults (column 6, lines 1-10). The Examiner equates the bottom protective layer of woven fabric to Applicant's "woven fiber layer" and the coating to Applicant's "film layer".

In order for a prior art reference to anticipate a claim, it *must teach every element of that claim*. See MPEP § 2131 (emphasis added). The law is clear in this regard that "[a] claim is anticipated only if *each and every element as set forth in the claim is found*, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added).

Reconsideration and withdrawal of this rejection is respectfully requested. Applicants respectfully assert that Jarrard et al. does not describe each and every limitation set forth in Claim 19. For example, Claim 19 requires the limitation of "a headliner core layer . . ." which is not present in Jarrard et al., contrary to the Examiner's allegation. The Examiner identifies Jarrard et al. as "directed to a soft cover for vehicles . . ." and "equates the flexible foam layer to Applicants' "headliner core layer." On February 23, 2005, along with a response to an Office Action dated October 28, 2004, the Applicants filed a declaration with supporting documents identifying a "headliner" as having particular mechanical property requirements. The supporting documents identified several tests and procedures regarding stiffness and strength of headliners. (See Johnson Controls: Standard Headliner Performance specification at 4-7.) In fact, this February 23, 2005, affidavit was filed in response to prior art identifying "flexible" material similar to the soft cover of the Jarrard et al. reference (sans being tearable). A copy of the Declaration and supporting document are attached hereto for the Examiner's reference. The Examiner does not attempt to identify how the disclosure of Jarrard et al. would satisfy the

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rigidity testing requirements of a headliner, as identified in the supporting documents to the February 23, 2005, affidavit. The Examiner accepted the affidavit, did not dispute any of its statements or supporting documents, and removed the flexible material cited against the claim. At that time a flexible material was no longer prior art to a "headliner core layer." Similarly this flexible material in Jarrard et al. should be removed as a prior art reference. It is respectfully believed that for this reason alone, the rejection against independent Claim 19 should be withdrawn and the application allowed.

Accompanying this Office Action response is a second Declaration filed by Garry Balthes, further clarifying what one skilled in the art identifies as a "headliner." In essence, the headliner is known as a rigid body and not a flexible soft cover pursuant Jarrard et al. Accompanying this Declaration are supporting documents that demonstrate an example of the rigidity of such a headliner. Again, this is not to say that the scope of the claimed invention cannot deviate from the specifications disclosed in the supporting documents. However, it does demonstrate the clear distinctions that exist between a headliner core layer and a flexible soft cover convertible top. Even the specifications disclosed in Jarrard et al. reinforce that point. As disclosed in col. 2, lns. 7-12 of the patent, the flexible soft cover should be bendable to an angle of 45° with minimal force applied. In contrast, the Johnson Controls Statement of Work Class 3 Recyclable Headliner specification accompanying the Declaration requires a tough rigid body. (See pages 28-29.) One skilled in the art can, therefore, see clear distinctions between the "headliner core layer" as claimed and the flexible soft cover of Jarrard et al. They cannot be equivalent.

In addition, the specification itself makes clear that the subject matter be a "headliner" having a "headliner core layer" that is a rigid structure. For example, if reading the claims even as broadly as possible, yet consistent with the specification as required by MPEP § 2111, the claimed headliner is not the same thing as a soft, flexible convertible top. The specification identifies the headliner as "shown to be quite rigid under environmental testing conditions." (See Specification at 11.) Furthermore, the Cantilever sag testing disclosed in the

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specification demonstrated minimal deflection (less than 2 millimeters).<sup>1</sup> The Cantilever testing from Jarrard et al. demonstrated a 45 degree deflection. The soft, flexible and flaccid foam core layer of Jarrard et al. cannot be equated to the headliner core layer of Claim 19.

Moreover, the Patent Office has determined an inherent distinction exists between the claimed "vehicle headliner" and the flexible soft cover convertible top of Jarrard et al. The headliner of the presently claimed invention is appropriate for Class 296, subclass 214 which is specifically directed to a headliner or liner support. The definition of this subclass includes (a) "a second covering located below and spaced from said covering means to form a covering which most directly forms the ceiling of the passenger compartment," or (b) "means for supporting said second covering in its operative position." In contrast, the flexible soft cover convertible top of Jarrard et al. has been identified in Class 296/107.01 which is defined as "a top capable of assuming a plurality of positions relative to the body of the vehicle and when in the down or inoperative position the vertical dimension of the top is changed." This is logical, since a "vehicle headliner" is a rigid overhead structure, whereas a convertible cover roof must be a flexible movable structure. (See Jarrard et al. at col. 1, lns. 16-21.) Clearly, Jarrard et al. does not identify a "vehicle headliner" having a "headliner core layer" as claimed.

Regarding the Examiner's rejections to Claims 21, 22, 26, and 43, because Jarrard et al. fails to teach a vehicle "headliner" that comprises a "headliner core layer," these rejections are believed moot. Nonetheless, because Jarrard et al. is directed to a different invention, it does not identify the claimed invention of the rejected dependent claims. For example, the positioning of the layers identified in Jarrard et al. is not believed to necessarily correspond with the positioning of the layers claimed herein.

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<sup>1</sup> It should be appreciated that the reference to the specification is not intended to either incorporate this specification into the claims, or limit the claims to the recited disclosures. The purpose of discussing the specification is to simply impress on the Examiner that a headliner is inherently a generally rigid structure as compared to a flexible, soft convertible top.

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On pages 5-6 of the Official Action, the Examiner rejected Claims 23-25 under 35 U.S.C. § 103(a) as being obvious under Jarrard et al. (U.S. Patent No. 6,871,898). The Examiner alleges that, as to claims 23 and 25, Jarrard et al. discloses the claimed invention except for that the film layer is polypropylene as required by Claim 23 and the binding resin is a nylon film layer as required by Claim 25. The Examiner concludes it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a polypropylene film for the film layer as required by Claim 23 and a nylon film layer for the binding resin as required by Claim 25, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416. The Examiner further concludes that in the present invention, one would have been motivated to use polypropylene as the film layer motivated by the cost and its stain resistance. The Examiner contends it should be noted that Jarrard et al. teaches that the coating is a stain resistant treatment; it is known in the art that polypropylene is stain resistant. The Examiner continued that in the present invention, one would have been motivated to use nylon due to its excellent strength, flexibility, toughness and elasticity and that Jarrard et al. teaches that the plastic used for the foam may be any plastic which can be foamed; it is known in the art that nylon can be foamed.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art to modify or to combine the references' teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (a reference is when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claim combination and the reasonable expectation of success must both be found in the prior art and not based on Appellants disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991), (See also MPEP § 2143.)

With respect to motivation, the prior art must suggest the desirability of the claimed invention, pursuant MPEP § 2143.01 Section I:

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Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

Furthermore, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). MPEP 2143.01 Section V. Also, the same is true if the combination of the prior art would change the principle of operation of the prior art invention being modified. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). MPEP 2143.01 § VI. Thus, the teachings of the references cannot be sufficient to render the claims *prima facie* obvious. *Id.*

With respect to the reasonable expectation of success requirement, some predictability is required to show such a reasonable expectation at the time the invention was made. See MPEP § 2143.02. In addition, evidence can be presented to support the position that no reasonable expectation of successes exists. *Id.*

With respect to teaching all of the claim limitations by the prior art, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), MPEP § 2143.03. Furthermore, all of the limitations of the claims must be considered and given weight. *Id.*

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It is respectfully believed this rejection is moot in light of the arguments made above, and is sufficient reason alone to withdraw this rejection and allow the claims. Nevertheless, the Examiner appears to be taking official notice that one skilled in the art would select nylon for the binding resin (since it can be "foamed") and polypropylene as the film layer (since it is stain resistant). It is respectfully believed that the Examiner's reliance on *In re Leshin* to supply the apparent deficiencies in the prior art is inappropriate. Regarding *In re Leshin*, the plastic material in question was selected for use in the claimed invention because of its suitability for the Applicants' intended purpose. (See MPEP § 2144.07.) The Examiner's argument that polypropylene would be chosen because it is "stain resistant" and nylon would be chosen because it is "foamable," is not believed necessarily relevant to the claimed invention herein. Furthermore, considering the Examiner's conclusory position with respect to those statements, pursuant MPEP § 2144.03, and 37 C.F.R. § 104(d)(2), Applicants respectfully request the Examiner submit an affidavit supporting the relevancy of such facts.

In any event, it is respectfully asserted that this rejection is moot and its withdrawal is respectfully requested. In addition, the Examiner's rejection of dependent Claim 24 is also believed moot and withdrawal of that rejection is also respectfully requested.

On pages 6-8 of the Official Action, the Examiner rejected Claims 20 and 42 under 35 U.S.C. § 103(a) as being obvious under Jarrard et al. (U.S. Patent No. 6,871,898) in view of Spengler et al. (U.S. Patent No. 5,709,925). The Examiner alleges that Jarrard et al. teaches the claimed invention above, but fails to teach that a portion of the randomly-oriented natural fibers can comprise sisal as required by Claim 42. The Examiner contends, however, that Spengler et al. is directed to a multi-layered panel having a core including natural fibers (Title). The Examiner alleges that Spengler teaches a laminate comprising a core including natural filler fibers embedded in a thermoplastic matrix and two cover layers (Abstract). Spengler allegedly teaches that the core layer includes a fibrous filler material which is preferably a natural fiber material (column 4, lines 59-61). The Examiner further alleges that Spengler teaches that the natural fiber material may include straw, cotton, flax, sisal, hemp, jute, or the like, or

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combinations thereof, and preferably includes flax and/or sisal (column 4, lines 59-64). Spengler allegedly teaches that the specific material to be used in a particular application can be selected depending upon the desired characteristics of the finished panel and depending on the current price and availability of various natural fibers (column 4, lines 59-69). The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate sisal fibers as a portion of the natural fibers as suggested by Spengler in the foam layer of Jarrard et al. motivated by the desire to use a functionally equivalent fiber based on the cost and availability various natural fibers and desired characteristics of the panel.

Again, for the reasons previously discussed with respect to Jarrard et al. and the anticipation rejections, it is believed this rejection is also moot. Nonetheless, it is respectfully asserted that there is no motivation to combine Jarrard et al. and Spengler, since Jarrard et al. is directed to a flexible soft cover composite and Spengler is directed to a "finished panel [having] a sufficient strength and stiffness to form self-supporting automobile interior panels, such as ceiling headliners . . . and that maintains a formed shape when finished." (U.S. Patent No. 5,709,925 the "Spengler Patent" at col. 2, lns. 7-10 and 21-22.) First, there is no suggestion that modifying a flexible soft convertible top with the elements of a rigid hard board panel and, second, adding rigidity to the soft cover convertible top of Jarrard et al. renders it unsatisfactory for its intended purpose, as well as changes its principle operation, contrary to the principles of motivation to establish a *prima facie* case of obviousness. See *supra*.

Accordingly, it is respectfully asserted that there is no motivation to combine the teachings of the soft convertible cover of Jarrard et al. with the rigid structure of Spengler. It is, thus, respectfully requested that this rejection be withdrawn. In addition, the Examiner's rejection of dependent Claim 20 is believed moot and withdrawal of that rejection is respectfully requested as well.

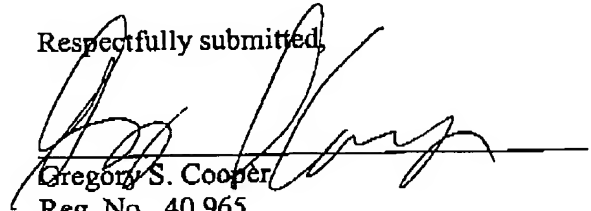


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If upon consideration of the above, the Examiner should feel that there remain outstanding issues in the present application that could be resolved, the Examiner is invited to contact Applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made. To the extent additional fees are required, please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 02-1010 (29595/82608) and please credit any excess fees to such deposit account.

Respectfully submitted,



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<b>JOHNSON CONTROLS</b>	<b>Statement of Work</b> <b>Class 3 Recyclable Headliner</b>
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**Toyota '06 Headliner**  
**Supplier Statement of Work**  
**Component Sourcing**

Revision	Date Released	Date Approved	Changes (In red font in the body of the document). A strikethrough font marks deletions until approved.
A	7/1/03		Release to suppliers

*OLD*

*BAGG - SEE PAGE 28*

*BENCH MARK  
SECTION 1. C.*

*STIFFNESS*

*[Signature]*

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## Statement of Work

### Class 3 Recyclable Headliner

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**Statement of Work**  
**Class 3 Recyclable Headliner**



## Statement of Work Class 3 Recyclable Headliner

### **Supplier Statement of Work (SSOW): Instructions and Responsibility:**

- The Program Manager is responsible to ensure that the SSOW is completed and updated as needed.
- The prospective supplier reviews the SSOW and the SSOW Terms and Conditions found at [www.jcimannual.com](http://www.jcimannual.com), and the Purchase Order terms and conditions found at [www.johnsoncontrols.com/asg/asg-terms.htm](http://www.johnsoncontrols.com/asg/asg-terms.htm)
- The Buyer and the SDT are jointly responsible to update the S-SOW form when information, specifications or scope changes occur.
- Page two of the SSOW is the Responsibility Matrix.
  - The Johnson Controls Program Manager completes the responsibility matrix.
  - Typical responsibilities are shown for Purchasing Class 1, Purchasing Class 2, and Purchasing Class 3. JCI Program Manager shall indicate which party (JCI or Supplier) is responsible for each item.

**Sourcing Concept** Not Applicable.

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CONTROLS**Statement of Work****Class 3 Recyclable Headliner****Supplier Statement of Work (SSOW): Definitions:**Model Year MY2006 LaunchCustomer ToyotaVehicle Assy Location N/AProgram Name Glass Free InitiativeProduct HeadlinerJCI Manuf Plant(s) Maplewood/CottonwoodJCI SOP Date 7/4/05Supplier Name TBDProgram ManagerBuyer Jim KoernerAQE TBDProduct Engineer Adam Chan and Kevin TomasekProgram Life 7/4/2005 through 7/4/10CAD format N/ADelivery Mode BatchOEM Directed Supplier NoRecyclability Requirement Proposed material must be able to be cleanly incinerated or recycled (Recyclable @ Class 3 or Better).Plant Location Requirement N/A

**Statement of Work****Class 3 Recyclable Headliner****Introduction**

This document outlines the program management, engineering, design, quality, validation, packaging, commercial, timing service requirements and definition of responsibility associated with the development and production of the designated program. This Statement of Work sets forth certain responsibilities and obligations of the Supplier to JCI, if Johnson Controls (JCI) elects to issue a Purchase Order for the work described. This document does not guarantee Supplier any specific volume of business or any business at all from JCI. THIS STATEMENT OF WORK IS NOT INTENDED TO BE A SUPPLY AGREEMENT OR ANY PROMISE TO ENTER INTO A SUPPLY AGREEMENT. In the event Supplier enters into a contractual relationship with JCI (by receipt of a Purchase Order, Long-Term Agreement or other written contract executed by JCI designated as a form of supply agreement, hereinafter the "Contract"), the Contract will govern the terms and conditions of the Supplier-JCI contractual relationship. In the event of any conflict between a term of the Contract and a provision of this Statement of Work, the Contract will govern. In the event that a Contract has been or is entered into between Supplier and JCI, Supplier will meet the procedures and obligations of this Statement of and, if a Contract is consummated, these will become express warranties made by Supplier and JCI.

The Supplier Statement of Work incorporates by reference all of JCI's standard terms of Purchase ([www.johnsoncontrols.com/asg/asg-terms.htm](http://www.johnsoncontrols.com/asg/asg-terms.htm)) and JCI's Supplier Manual ([www.jcimanual.com](http://www.jcimanual.com)). Supplier should review and understand these documents before accepting this SSOW.

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CONTROLS**Statement of Work****Class 3 Recyclable Headliner****Approvals and Contacts**

The individuals designated as **Program Manager and Buyer** on page 1 of the SSOW are the Project Managers for Johnson Controls. Unless otherwise indicated in the Statement of Work, such persons will be responsible for all communications, including notices, acceptances and approvals of charges, or other items sent or received by the parties in conjunction with this Statement of Work. Supplier agrees to be bound by the requirements set forth herein. Any and all exceptions to these requirements must be communicated in writing to Johnson Controls within 2 weeks of the date of issue.



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- 1) The Supplier will provide components to JCI for the Program. The Supplier will be responsible for any combination of cost, program management, engineering, design, quality, tooling, process, validation, packaging, and manufacturing.
- 2) **PURCHASING CLASS:** As indicated on page 1 of the SSOW, work will be sourced the following category:
  - a) Full Service Class 3: Full service supplier responsible for program management, engineering, quality, full design and process validation, tooling, packaging, manufacturing, feasibility and cost.
- 3) If indicated on page one of the SSOW, the Supplier shall be required to support this program from a plant in close proximity to JCI's plant in order to supply to JCI on a just-in-time basis. The Supplier and JCI will consult concerning the design and layout of the Suppliers nearby facility. In particular, the precise location of the plant in relation to JCI's plant and the configuration of its facilities will be established in a manner which facilitates efficient and cost effective deliveries of the product(s) to JCI.
- 4) The Supplier must obtain JCI written approval prior to implementing any changes in program direction and support. This requirement applies to design, engineering, manufacturing, staffing, facilities, timing, etc.
- 5) The supplier must be capable of supplying the JCI plant on a just-in-time basis. (All Suppliers).

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**Class 3 Recyclable Headliner****Product Description**

The general product description for this project is as follows.

JCI is seeking a supply base that can provide a headliner substrate, which satisfies the requirements found in APPENDIX A. These include, but are not limited to, a class three recyclable substrate that can successfully pass the testing requirements defined in APPENDIX B.

**Statement of Work****Class 3 Recyclable Headliner****Section 2: Program Management Expectations and Requirements**

- 1) Supplier is required to support all activities throughout the term of any written agreement with JCI per the attached responsibility matrix in on page two of the SSOW as well as any other assigned responsibilities.
- 2) The Supplier will provide JCI with a resource matrix and timeline identifying all personnel planned to support this program. The matrix will include name, title, years of experience, and level of support (i.e. dedicated or resource). The timeline will indicate when resources will be added and subtracted from the program.
- 3) The Supplier is required to provide on site support all pre-production and production product design, product development including but not limited to builds identified by MRD or program timeline at both JCI and OEM manufacturing sites. The Supplier is required to have technical and commercial resources available to support ongoing production.
- 4) The Supplier is responsible to create and maintain an open issue tracking document that will be updated and provided to JCI on a weekly basis.
- 5) When issues arise that may jeopardize program timing, quality, cost or delivery, it is the responsibility of the Supplier to notify in writing the JCI Program Manager, Plant Manager (after Start of Production) and JCI Buyer immediately.
- 6) The Supplier is responsible for holding quarterly project reviews on site at JCI. **(This may increase to monthly or weekly meetings as program issues dictate).** The format for the project review will be defined by the Supplier but must include updates in the area of design, engineering, cost, timing, quality, tooling, manufacturing, logistics, facilities, safety, ergonomics and program risk.
- 7) The Supplier must communicate and obtain pre-approval of any key personnel changes of those working on the program. Issues regarding organizational changes are to be directed to JCI Purchasing and Program Management as soon as they arise.
- 8) The Supplier must support the JCI Product Launch System.
- 9) The Supplier is responsible to train Supplier program personnel with JCI and or OEM procedures and processes as required.
- 10) The Supplier is responsible to meet all program timing requirements. Overall timing milestones are specified in the timing summary. The Supplier is responsible to provide JCI program timelines for each full assembly, sub-assembly and component sourced to the Supplier. The time line must include all required tasks and be updated and provided to JCI Program Management on a weekly basis.

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- 11) The Supplier must be responsive to JCI's requests in order to allow JCI to meet company and customer objectives. The Supplier will provide JCI with a 24-hour 7 day a week emergency phone number.

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**Class 3 Recyclable Headliner****Section 3: Engineering Expectations and Requirements**

- 1) The Supplier is responsible to provide Engineering support for the program, e.g., tracking and resolving issues, feasibility, attending meetings and events associated with the development of the supplied parts.
- 2) The Supplier is responsible to create and maintain an open engineering issue list to JCI format.
- 3) The Supplier is responsible to create and maintain a target tracking report. This report will track such items as weight, performance, fit and finish, etc.
- 4) The Supplier is responsible to meet or beat target objectives.
- 5) The Supplier is responsible to perform benchmarking studies, Quality Function Deployment, and consumer/customer research on all major systems and necessary components and incorporate improvements whenever possible.
- 6) The Supplier is responsible to reflect GD&T criteria in tools, gages and dimensional verification studies.
- 7) The Supplier is responsible for manufacturing feasibility and mistake proofing.
- 8) The Supplier is responsible for tooling feasibility.
- 9) The Supplier is responsible for the feasible assembly of supplied parts into receiving sub-assemblies or vehicle.
- 10) The Supplier is responsible to create and maintain an engineering bill of materials.
- 11) Unless otherwise notified, the Supplier is responsible to provide prototype and pre-production parts that meet all applicable quantity, construction, process, material, quality, and delivery requirements.
- 12) The Supplier is responsible to provide prototype (SEE #11) and pre-production parts with the proper identification and information. Identification and information should include, but not be limited to: part number, design level, material symbol, safety shields, cavity number, design/process deviations, shipping label, bar code, control numbers, dimensional data, capability data, chuck, effort data, performance data, appearance data, process data, etc. Failure to comply with requirements will result in re-submission.

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13) The following are the validation responsibilities for Class 3 Suppliers:

- a) Meet all applicable OEM CUSTOMER, FMVSS and JCI specifications that pertain to component level validation of process.
- b) JCI reserves the right to request a Supplier plan to conform to all required specifications prior to business award. Failure to present an acceptable plan could effect JCI's supplier selection.
- c) Take ownership of and perform all necessary testing for process validation.
- d) Create and maintain DVP&Rs using JCI provided form. (Currently DVP&R form WW-PLUS-FR-04-19).
- e) Participate and take part ownership/responsibility with JCI in design and system vehicle level performance testing. The team will address any design and system failures.

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**Class 3 Recyclable Headliner****Section 4: Design Expectations and Requirements**

- 1) Not applicable to class 3 suppliers
- 2) Samples to be provided to JCI as originally agreed between Supplier and JCI.
- 3) Sample dimensions/size is to be agreed upon by JCI and Supplier.
- 4) Sample quantities to be agreed upon by JCI and Supplier depending on testing and availability of material(s).
- 5) JCI will require that the supplier provide a detailed BOM of the samples for evaluation of restricted substances and recyclability.
- 6) JCI requires that technical support for sample processing, testing, specification, and other information be provided with the samples so that a proper engineering analysis can be made of the samples.
- 7) Timing for samples to be agreed upon with the JCI and Supplier.

**Section 5: Quality Expectations and Requirements**

- 1) The Supplier will use and is responsible for the JCI Advanced Product Quality Planning Process and will communicate and track status to program milestones as required by the program AQE.
- 2) The Supplier will provide appropriate support for product development initiatives including DFA, DFMEA, PFMEA, process flow, control plan, lessons Supplied, etc. at JCI and OEM CUSTOMER facilities.
- 3) The Supplier is responsible to provide product to JCI at an incoming defective rate of zero (0) PPM.
- 4) The Supplier will analyze all warranty issues using a root cause 8D problem solving method.
- 5) If required, the Supplier will comply with the JCI MQR (Management Quality Review) Process as defined in the JCI Supplier Standards Manual.
- 6) It is expected that 100% of the Supplier Part Submissions (PPAP) will be on time and complete per the AIAG and JCI requirements as defined in the JCI Supplier Standards Manual, or any other written agreement.
- 7) The Supplier is responsible for part appearance and the appearance approval process. (The Supplier is responsible to gain OEM CUSTOMER approval for gate locations, parting lines, pre-grain approval, grain approval, color, gloss, knit lines and general surface appearance.) JCI will support the Supplier in this process.

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- 8) Dimensional data will be provided and managed by the Supplier in support of all pre-production and production build events. "X" number of points per part, "Y" number of pieces (no less than 30) at OEM SPECIFIC builds. Parts must meet all tolerance and capability requirements. Additional points may be added to established capability or address critical areas or concerns. "X" and "Y" to be determined with JCI at prototype design release. Layout reports will be submitted per the AIAG Production Part Approval Dimensional Results form.
- 9) The Supplier must meet the following process capability requirements:  $P_{pk} \geq 1.67$  on all significant (special) characteristics prior to OEM SPECIFIC build, and  $C_{pk} \geq 1.33$  at OEM SPECIFIC BUILD.
- 10) The Supplier is responsible for all lab testing as determined by the Supplier, JCI and or the Customer. The testing results in the product Supplier Part Submissions (PPAP) must include the proper lab accreditation documentation.
- 11) The Supplier is responsible for gage and check fixture design, build, qualification and prove-out. JCI approval of the gage/check fixture supplier, gage/check fixture strategy and design is required.
- 12) The Supplier is responsible to hold periodic gage/check fixture design/build reviews.
- 13) The Supplier must achieve third party gauge certification prior to gauge GR and GR&R that is 10% or less of part tolerance.
- 14) GR&R must be less than 20%. GR&R to be performed per AIAG MSA Average and Range Methodology for Variable Data.
- 15) Gage and check fixture designs are to be done to the latest level of OEM CUSTOMER SPECIFIC CAD.
- 16) All gages and check fixtures will be production pull ahead CMM holding fixtures for OEM CUSTOMER SPECIFIC BUILD with variable data points added for production.
- 17) Supplier must have a Certified Quality System to meeting regional and OEM expectations (i.e.: QS9000, VDA61, TS16949) for all current pre-production and production locations. For all new locations, the Supplier must be certified within 6 months from start of production.
- 18) The Supplier is responsible to achieve OEM CUSTOMER approved visual harmony between parts sourced to the Supplier and the rest on the interior. Carry-over parts have equal requirements. (Where Applicable)
- 19) The Supplier is responsible for Process Sign Off and Supplier Part Submissions (PPAP) and all associated activity and parts required achieving Process Sign Off and Supplier Part Submissions (PPAP) approval. An onsite Process Sign Off will be conducted prior to Supplier Part Submissions (PPAP). Supplier Part



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Submissions (PPAP) requirements are identified in the JCI Supplier Standards Manual available at [www.jcimanual.com](http://www.jcimanual.com).

- 20) The Supplier is responsible to use a Design Of Experiments (or similar) process to establish and optimize the production manufacturing process (demonstrated at Process Sign Off) that meets or exceeds quality and delivery requirements in the most efficient way possible.
- 21) The Supplier must maintain process parameters displayed during Process Sign Off. Any changes to the process will require resubmission of Process Sign Off/Supplier Part Submission (PPAP).
- 22) The Supplier is responsible for on-going data collection and capability studies to be used as predictive indicators of the manufacturing process consistent with the product control plan.
- 23) The Supplier is responsible to support JCI's Process Sign Off and Supplier Part Submissions (PPAP) to JCI's OEM CUSTOMER.
- 24) Where applicable, the Supplier is responsible to obtain from JCI the date which is the beginning date for supplier to establish and maintain a torque calibration and control plan.
- 25) The requirements/expectations in the JCI Supplier Standards Manual and OEM CUSTOMER Supplier Quality Manuals supplement this statement of work must be met. (JCI Supplier Standards Manual available at [www.jcimanual.com](http://www.jcimanual.com))

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- 1) All tooling will utilize specified CAD format models as the master. All data will be exchanged in specified CAD format and must be used in the specified CAD format. Includes all tooling designs.
- 2) The Supplier will provide tool engineering to meet all JCI program and launch team requirements.
- 3) All JCI/OEM CUSTOMER owned tools are to be identified per JCI and OEM CUSTOMER specifications.
  - a) The following items are considered tooling and therefore the property of JCI or the OEM:
    - i) Tools specifically made for the production of a part or parts unique to JCI or OEM CUSTOMER.
    - ii) Unique computer software required directly for the production and or gauging of parts for JCI or OEM CUSTOMER.
  - b) The following items are not considered tooling and are not acceptable as part of a tooling bill, even if they are dedicated but not unique:
    - i) Generic tooling, general-purpose items, processing or capital equipment, and computer hardware.
    - ii) The cost of or associated with automation, test equipment, process control equipment, manufacturing Supplieming curve, launch costs, operator training, and vision cameras.
- 4) The Supplier will design and review all tooling to applicable JCI Tool Standards and Checklists where comprehensive tool building standards are not available.
- 5) The Supplier will obtain three (3) competitive quotes (minimum) for all tooling. The tool shop(s) selected by the Supplier will provide a tool cost breakdown that includes all tooling assumptions. This breakdown and copies of the three quotes will be provided as part of the quote package to Johnson Controls. The tooling source selection is the Supplier's decision, and should be based on overall value, but JCI reserves the right to reject a tool shop chosen by the Supplier.
- 6) Tool cost submitted to JCI is limited to the following: design of tools, tool build labor, tool build materials, one (1) tool sampling, and initial tool shipment to the manufacturing facility. Sampling cost is to be based on standard industry hourly rates plus the cost of material. Press setup and hookup charges for samplings are not acceptable. Costs of capability studies are considered part of the supplier's overhead. A general percentage markup of tooling is not allowed. JCI must be notified of, and reserves the right to be present for, any run-at-rates of new tooling.
- 7) JCI reserves the right to conduct validation audits of tool costs and record logs, at any time.

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- 8) JCI reserves the right to decline payment of any tooling cost not supported by a JCI Tooling Purchase Order.
- 9) A Supplier that designs, develops, or manufactures special tooling in-house will provide all associated overhead costs in fully accounted tooling labor rates to JCI upon request. In addition, before placement of any tooling work with internal tool shops, the Supplier will provide evidence to JCI of competitive quoting with outside tool sources. Supplier records will be subject to audit.
- 10) Changes that occur while new tooling is being constructed are to be completed by the tool shop(s) currently constructing the tools. Cost of changes must be validated individually by review of the tool cost breakdown prior to issue of purchase orders. Changes that occur to tools after the tool build is complete are also required to have costs validated prior to issue of purchase orders. JCI reserves the right to conduct run-at-rates after changes have been completed.
- 11) Tool sources will manage tool shop and work schedules to meet JCI program requirements without additional charges. However, in those circumstances where overtime at a tool shop becomes necessary, JCI will consider requests for reimbursement for that overtime. JCI maintains sole discretion whether or not to reimburse such overtime. Prior to proceeding with work, it is necessary that these costs be reviewed and agreed to by a JCI Tool Buyer. Final authorization to proceed with a change must come from a JCI Tool Buyer by means of a Purchase Order.
- 12) JCI must be notified, and agree with, in advance of the transferring of tools from one manufacturing site to another. Any costs associated with the transfer of tools will be the Suppliers. JCI reserves the right to re-PSO after tools have been transferred. The Supplier is responsible for design and build of all tooling used to manufacture parts awarded to the Supplier and shall meet all applicable JCI Tool Standards.
- 13) The Supplier is responsible for the tooling for the entire life of the program, including the service period after production balance-out. Supplier will notify JCI in advance of implementing any change if any engineering change will impact tools for service requirements.
- 14) The Supplier/Tool Shop building the tools will comply with QS 9000, TE Supplement.
- 15) The Supplier is responsible for the tooling preventative maintenance and spare parts so as to meet all JCI manufacturing, delivery and quality requirements. Preventative maintenance plans must be documented and kept on file by the Supplier. JCI reserves the rights to review the Suppliers preventative maintenance and spare parts plans.
- 16) The Supplier will insure and protect said property against loss or damage.



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#### **Section 7: Packaging Expectations and Requirements**

- 1) Supplier will design (with input from JCI), build, test and purchase all returnable and expendable packaging.
- 2) The Supplier must conform to all packaging requirements per the JCI Supplier Standards Manual.
- 3) The JCI Packaging Engineer must approve all packaging.
- 4) The Supplier is responsible for cleaning, maintenance, repair, replacement and containment of all returnable packaging.
- 5) The Supplier is responsible to assure there is enough returnable packaging in the system to maintain production +/- 15%.
- 6) All packaging testing must include a ride/shaker test per JCI specifications.
- 7) JCI reserves the right to assume the packaging and logistic responsibility and adjust the price accordingly.

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- 1) All engineering, design and validation testing services are the responsibility of the Supplier. Any charges to be amortized into the production piece cost must be broken out separately including resources, rates, hours, etc.
- 2) Any changes requested by JCI will be quoted using the variance RFQ form per the JCI Supplier Standards Manual.
- 3) Program model year is the model year identified on page one of the SSOW with SOP (Start of Production) scheduled for the SOP identified on page one of the SSOW
- 4) Program life is assumed to be the number of years identified on page one of the SSOW; provided, however, this is not a guarantee of business for the entire program life. The term of the parties' relationship shall be governed by written agreement.
- 5) Production piece price quotations will be based on a FPV (Financial Planning Volume) of identified on page one of the SSOW. **THIS IS NOT A GUARANTEE OF PRODUCTION VOLUME OR ANY COMMITMENT TO A STATED VOLUME.**
- 6) Vehicle assembly location is the location identified on page one of the SSOW
- 7) JCI manufacturing location is identified on page one of the SSOW.
- 8) Production piece price quotation will be based on FOB location as presented on the JCI RFQ form.
- 9) The Supplier is responsible to tool and capitalize to meet a CPV (Capacity Planning Volume) defined one page one of the SSOW unless otherwise defined as a lower volume per tool.
- 10) The Supplier is responsible to define all capacity constraints above the program capacity requirements for all tools, machines, facilities and suppliers.
- 11) The Supplier will base capacity calculations on two (2) eight (8)-hour shifts per day, 240 days per year.
- 12) If Production Supplier is Prototype Supplier, pre-production and prototype parts made from prototype tools, regardless of quantity, will be supplied at five (5) times production pricing.
- 13) Parts made from production tools, regardless of quantity, will be supplied at production pricing.
- 14) Set-up charges will not be paid for pre-production and production parts including engineering changes.

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- 15) The Supplier will be expected to meet minority business sourcing goals, to report on their minority purchases, and to provide JCI with ways to increase minority content, reference the JCI Supplier Standards Manual.
- 16) Supplier will fully participate in the JCI PACT program as defined in the JCI Supplier Standards Manual.
- 17) Unless otherwise identified, the JCI payment terms will be net 45 prox. days.
- 18) Tooling will be reimbursed for Production tools after full Supplier Part Submissions (PPAP) approval and after receipt of funds from OEM CUSTOMER.
- 19) All quotes from Supplier will be in specified currency, with exchange rate listed if applicable.
- 20) Raw material, labor and burden costs, per the agreed upon quotation, are based on current year economics and are firm for the life of the program.
- 21) JCI reserves the right to direct and negotiate the resin and steel pricing. This price shall be used in the Supplier's quote.
- 22) All product or process changes must be communicated to and approved by JCI prior to implementation of change.
- 23) The Supplier will perform and supply to JCI results of a DOE establishing the most efficient process for each part that also meets all other quality and manufacturing requirements prior to PSO run at rate. This agreed to process will be demonstrated at PSO.
- 24) JCI reserves the right to review Tier II and Tier III supplier sources.
- 25) All expenses incurred by JCI to support tooling, processing and manufacturing of parts above and beyond what would normally be expected will be invoiced directly to the Supplier.
- 26) After engineering release for tooling, costs for changes required by Supplier to meet tooling, processing and manufacturing requirements are the responsibility of the Supplier.
- 27) Class 1 and 2 Suppliers are responsible to design parts that meet all of the stated requirements. Any costs associated with the parts not meeting the requirements are the responsibility of the supplier.
- 28) The Supplier is responsible to respond to all JCI quote requests using the JCI standard forms as found in the JCI Supplier Standards Manual.
- 29) Bank build coordination is the responsibility of the Supplier.
- 30) Supplier is responsible for managing and advising JCI on potential obsolescence during engineering changes, model year changes and production balance out.

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- 31) Supplier is responsible for all capital equipment necessary to manufacture components and sub-assemblies including but not limited to injection mold machines, die-cut presses, vacuum-form machines, water-jet machines, work tables, sonic machines, specialty tools, material storage/handling racks, etc. Supplier will also be responsible for any specialized handling equipment needed at the Tier One location.
- 32) The Supplier is responsible for the accuracy of its quotations and cost breakdowns.
- 33) The Supplier is responsible to respond to engineering change requests using the JCI RFQ form. The completed response must be sent to the Account Financial Manager or Cost Analyst and Buyer within a time period not to exceed 5 working days of the request.
- 34) If required, the Supplier will comply with the JCI Business Review Process as defined in the JCI Supplier Standards Manual.
- 35) The Supplier will comply with the JCI SIDP (Supplier Individual Development Plan) as defined in the JCI Supplier Standards Manual.
- 36) In the case where the Supplier is co-located at a JCI or OEM Customer facility, the facility and related cost responsibilities will be defined in a separate agreement.
- 37) Cancellation: The Supplier must share the business risks as well as the opportunities associated with this program; therefore the quotation should not contain quantity buy, take or pay provisions. Contingent liabilities resulting from the cancellation of the program, if any, must be identified separately in writing. Cancellation or termination costs will be paid by JCI only as stated in the JCI Terms of Purchase. In any case completed parts and raw material inventories will not be reimbursed if found to exceed JCI approved inventory levels. JCI must approve in writing any inventory level exceeding the PO allowable level.

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As an essential part of the the order, the supplier will provide service parts to Johnson Controls (JCI) to support OEM (customer) requirements for ten (10) years after the last production build date of the program ("EOP"). If the OEM extends the period of the required service parts term, the supplier agrees to abide by the extended period.

**B. Service Part Pricing**

All service parts will be provided at production-level pricing for 5 years after the EOP. The supplier can request adjustments to pricing after the 5th year of the service term, as provided in JCI's standard Terms of Purchase (available at <http://johnsoncontrols.com/asg/asg-terms.htm>) and as further detailed below.

**C. Other elements of Cost**

If there are additional cost elements, these costs must be submitted to JCI for consideration. The cost must be submitted as a separate quotation document and fully disclose a reasonable and justifiable cost breakdown. Additional cost elements that will be considered are:

- ☐ Packaging
- ☐ Special Handling
- ☐ Transportation

**D. Set-up costs**

Johnson Controls, Inc. and supplier will negotiate reasonable minimum runs to offset set-up costs associated with the service part after final build-out. Where minimum runs are not agreed to, set-up costs may be invoiced as a part of the service PO and will be paid only according to the terms and conditions reflected in the PO. Set-up costs must be supported with back-up data such as:

- ☐ Purchase orders
- ☐ Run dates
- ☐ Run quantities
- ☐ Program
- ☐ Ship-to Location

An agreed to cost model will manage set-up cost. All set-up cost submitted will be governed by the terms and conditions specified in the cost model. Where there is a minimum buy agreement no set-up charges will be applicable.



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The tooling life expectancy will include the term of service depicted under the aggregate service requirement. The supplier will make a provision to tag each tool as a service tool after the life of the program as the tool enters service life. The supplier will properly maintain and store tools as may be required to fulfill all service parts obligations and other agreements between the parties.

**B. Maintenance and PMs**

The maintenance of the tool is the responsibility of the supplier. It is the responsibility of the supplier to do the normal Preventative Maintenance to keep the tool production ready. Any scrap generated as a result of a tool improperly maintained is the responsibility of the supplier.

**C. Tool Assessment**

The supplier will also provide, as a part of the program balance-out requirement, a tool assessment. The assessment will include an analysis of the quantity of parts the tool can produce before refurbishment and other tool conditions that may hinder performance during the term of service.

**D. JCI Ownership of Tools**

JCI is the owner of all tools except where expressly stated by JCI to be property and expense of the supplier. The supplier will clearly mark JCI's property as "property of Johnson Controls." The supplier will take all steps necessary to prevent any actions by third parties affecting JCI's property and will inform JCI immediately if a third party intends to claim or encumber the property. The supplier will be solely responsible for the maintenance, care, safety and operation of the tools while in the possession of the supplier or its subcontractors.

**E. Disposal of Tool**

The supplier must obtain written approval of JCI before disposing of any tools. The supplier must disclose, at the request of JCI, the scrap value of tooling before the tool is disposed.

**III. Minimum Quantities Terms**

- ☐ Minimum quantities are allowed only through negotiation with Johnson Controls, Inc. and as expressly stated in a JCI purchase order (i.e. to fill a box, to cover set-up costs)
- ☐ Orders may be placed as an individual item (1 piece) or in multiples / standard pack quantities as agreed upon, including any agreement set-up cost as applicable.
- ☐ JCI reserves the right to make a bridge buy at any time.

**IV. Releases**

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- ☐ Parts will be released per an approved EDI system.
- ☐ A 13-week schedule will be provided when applicable
- ☐ Supplier may seek JCI approval to ship multiple releases of the same part at one time on a quarterly basis.
- ☐ All obsolescence claims must be submitted to the supplier's assigned JCI Buyer using the appropriate JCI Supplier Obsolescence Claim procedure.

**V. Quality**

The service part quality must be maintained at PPAP level and the latest revision.

**VI. Additional Terms**

All service parts purchases will be governed by JCI's standard Terms of Purchase, available at <http://johnsoncontrols.com/asg/asg-terms.htm> or by calling 734-254-7500.

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1. JCI's goal is 10 PPM or less for this for this product.
2. Quality issues between JCI and Supplier will be addressed thought AIAG and commonly accepted process and practices.

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**Manufacturing Assumptions**

JCI will be responsible to process a properly functioning H/L



## Statement of Work

### Class 3 Recyclable Headliner

#### Appendix A

#### **Product Requirements**

1. Substrate that is glass free
2. Meets Toyota performance spec TSF7762G – See Appendix B
3. 1200 gsm max, with a target of less than 1000 gsm
4. Cost: \$4/m<sup>2</sup> for substrate (does not include fabric covering)
5. Recycle level: 3 or better (can be incinerated)
  - Level 4 = Landfill
  - Level 3 = Clean incineration
  - Level 2 = Recycle into another stream (H/L to park benches)
  - Level 1 = Recycle into original product
6. Equipment/processes available:
  - Infrared Quartz Heater System
  - Forced Hot Air Convection
  - Heated Formed Tool

#### **Product Requests**

1. Airbag compatible
2. Design freedom – ability to stretch and form (minimum of 130% 3D elongation)
3. Fabric flexibility – compatible with nonwoven, knapped knit and non-knapped technical fabrics.
4. System capable – ability to carry components during shipping and assembly (grab handles, visors, etc.)
5. Performance flexibility – Ability to offer product at discrete performance levels, depends on the application (small truck vs. SUV).

#### **Benchmark Data**

1. Three (3) Point Bend Test
  - a. See JCI PES00373, section VI, test 2 and JCI TM OHS-028 (see PES).
  - b. Offset yield strength minimum of 17N.
  - c. Stiffness minimum of 5.0 N/mm
  - d. Toughness minimum of 70%
2. Cantilever Sag test
  - a. See JCI PES00373, section VI, test 3.

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- b. Less than 10mm
- 3. Impedance tube for acoustics
  - a. See JCI PES00373, section III, test 6.
  - b. 17.5% Absorption @ 500 Hz, 27.5 % Absorption @ 1000 Hz, 30% Absorption @ 2000 Hz, 40% Absorption @ 3000 Hz
- 4. Air permeability/ventilation staining
  - a. Ventilation staining = Staining must be a grade 3 or better
  - b. For grade equivalent see Toyota Specification page 6 or 14, (table 4 in TSF7762G)
  - c. See DVP&R test letter J
  - d. Air Permability – Maximum air flow rate is 0.0003L/cm<sup>2</sup>/sec
  - 1. e. See DVP&R test letter O



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#### Appendix B

Validation/Testing Specifications. - Must meet Toyota Testing Specification (TSF7762G)

Initial Screening of all samples will be evaluated by the following tests – details on all of these tests can be found on the JCI DVP&R or PES

1. Three (3) Point Bend Test – See benchmark for acceptable passing criteria
2. Cantilever Sag – test See benchmark for acceptable passing criteria
3. Impedance tube for acoustics - See benchmark for acceptable passing criteria
4. Air permeability/ventilation staining – See benchmark for acceptable passing criteria

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## Statement of Work Class 3 Recyclable Headliner

### Appendix C

DVP&R – Toyota Specific

JCI Headliner PES 00373



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**Appendix D**

Toyota Specifications (TSF 7762 G)



**SUPPLIER STATEMENT OF WORK - Johnson Controls Inc. ASG  
TERMS AND CONDITIONS**

**Appendix F**

**Schedule/Timing**

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